

products. Every advance in the quality of these products has been followed by advances in other industries. The raising of the refractory qualities of fire-bricks, for example, gives the metallurgist greater power and scope, and the success of the electro-chemical industries is to a large extent dependent upon the capability of the potter.

Considering the importance of the subject, the list of books with trustworthy information is surprisingly small. We therefore turn with pleasure to the present work, which is a history of the various branches of the clayworking industry in the United States, from the building of the brick houses by the early colonists up to the close of 1907. Consequently, there is no more than a passing reference to the very curious pottery fashioned by the aboriginal Indians. The book is compiled from statistics collected in the main by the United States Census Bureau and the United States Geological Survey. The first portion of the history is a general *résumé* of the various stages in the development of the industry through the manufacture of common bricks, glazed bricks, terracotta, tiles, and pottery. In the second portion of the work, these stages are discussed State by State.

The author can seldom be charged with diminishing the value of his facts by entangling them in the meshes of hypothesis. Statistics are given showing the yearly value of the products made in the United States, and also imported. Using the word "consumption" with its broadest connotation, it is possible to calculate from the authors' tables the approximate proportion of the total yearly consumption of "pottery" which is actually manufactured in the States. We thus obtain 57 per cent. for 1870, and 68 per cent. for 1907. The influence of the ceramic schools is said to be a "strong factor" (pp. 6-7) in the evolution of the industry. The first of these was started in Ohio in 1894, under the capable hands of Prof. E. Orton; the fifth, in Iowa, in 1907. Quoting from Mr. J. Moses' "One Hundred Years of American Commerce" (p. 53), the authors state that it was not, indeed, until the first real protection by the tariff ever accorded the potters was enacted, as a war measure, that the American maker found himself able to enter the field against the English potter. The influence of imported workmen, on whom there is no tariff, is not indicated, although we find some curious evidence pointing in that direction from Messrs. Ries and Leighton's tables. In 1897, 41 per cent. of the total china clay consumed in the States was mined there, and in 1907, 68 per cent. The remainder was imported. This might be attributed to the dearth of china clay, but the Americans have splendid clays, better, indeed, than our own. The greater probability is that the "secret" recipes of the imported workmen are compounded with raw materials from Cornwall, &c., and a mysterious virtue is supposed to reside in a recipe for an "English" body or glaze. The workmen have not always the courage and skill to adapt imported recipes to local materials. The recipe is thus master of the situation.

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## A JOURNEY ACROSS VENEZUELA AND COLOMBIA.

*The Journal of an Expedition across Venezuela and Colombia, 1906-7. An Exploration of the Route of Bolivar's Celebrated March of 1819, and of the Battlefields of Boyaca and Carabobo. By Dr. Hiram Bingham. Pp. viii+287. (New Haven, Conn.: Yale Publishing Association; London: T. Fisher Unwin, 1909.) Price 10s. net.*

THE expulsion of Spanish power from the present State of Colombia was effected by Bolivar, who in the year 1819 conducted an army from near Caracas to Bogotá, across country that had been deemed to be impassable. All the saddle and pack animals, and many of the soldiers, succumbed to the hardships of the march, a distance of about 700 miles, traversed in about seven weeks. Spanish-American historians have compared this feat with the marches of Hannibal and Napoleon. Dr. Bingham, lecturer on Latin-American history at Yale, wanted to form a proper estimate of the actual obstacles that were overcome by the army of liberators, the backbone of which was the foreign legion of British veterans from the campaign of Waterloo. He therefore undertook the spirited and difficult task of following up the route of Bolivar through regions not easily visited and scantily known.

There is a regular overland route from Caracas to Bogotá which leads over the high plateau between the Central and the Eastern Cordilleras. The author and his companion, Dr. Hamilton Rice, however, went, like Bolivar, broadly speaking, parallel with this road, along the foothills of the Eastern Sierras, where they join the vast Llanos, at an average altitude of 600 feet to 700 feet above sea-level. The greater part of this route has been scantily described by but few travellers, and some districts were known locally only.

The travellers left Caracas at the beginning of January, 1906, and crossed the great Llanos with mules, and an ox-cart for the baggage. In time the cart had to be discarded. There were many rivers to cross, tropical forests, and the Llanos. These, never pleasant to traverse, were rendered more than difficult by the rains which set in about the middle of March, and continued with increasing force. The stiffest part of the journey began with the ascent to the plateau, to gain which the Paramo, a pass of 13,000 feet elevation, had to be negotiated.

For reasons only known to themselves, the travellers did not carry a tent. Consequently the diary is full of the troubles of getting accommodation in the wretched villages or occasional so-called towns, in rest houses kept by suspicious Indians or disobliging white men, often without sufficient food. The Western Venezuelanos (why are they persistently called Venezuelans in the book?), white, mixed, and brown alike, are apparently not a very prepossessing people, and local officials were, of course, worse. The Colombians seemed to be more amenable, as being less beyond the reach of civilisation.

The whole journey took 115 days, more than twice the time required by Bolivar's army. The book is adorned with numerous photographs of characteristic

scenery and scenes, e.g. Yaruro Indians between the Apure and Araura rivers. Although the travellers do not profess to be naturalists, they mention a good many birds and beasts which they came across. There are also some most interesting pictures of Iabiru storks on their nest, and of half-a-dozen Capybaras on the bank of a stream.

The reader will get a very good idea of the kind of country and its inhabitants.

#### A STUDY OF CHILD-LIFE.

*Children in Health and Disease. A Study of Child-life.* By Dr. David Forsyth. Pp. xix+362. (London: John Murray, 1909.) Price 10s. 6d. net.

THIS volume should appeal to a large number of readers, medical and lay, and its publication at the present time is opportune, for it brings a sane and experienced judgment to the assistance of those who in a public or private capacity are striving to solve the problems with which it deals. The vitality of the country depends on the health and training of the children, and while the duty of supervision rests with the physician, success can only be obtained through intelligent cooperation of parents and teachers.

The early chapters deal with the physiology of childhood. The food consumption of the infant, relatively to body weight, is considerably greater than that of the adult, but only one-fifth of the ingesta is used for purposes of growth, while the rest serves to maintain the temperature of the body. In proportion to bulk, the surface area is greater in a small child than in a man, hence increased loss of heat and more need for heat production. In early life appetite waits on surface area, and in the recognition of this fact lies the clue to the proper feeding of children. The amount of food should be determined by the weighing-machine rather than the calendar, and it should contain plenty of carbohydrate, the heat-producing ingredient in diet.

By the end of the second year a child's mind has acquired, in an elementary form, most of its principal faculties, so that its further progress consists in perfecting them rather than in the acquisition of new ones. Habit clusters round the lines of least resistance, and education is an attack on natural indolence. From the medical point of view school-life stands by itself. Opportunities for the transmission of infectious and contagious diseases are greatly increased, and the problem of class-room hygiene offers special difficulties. The evils of the examination system, defective ventilation, bad feeding arrangements, and insufficient hours of sleep exist in many higher-grade schools, as they do in elementary schools. The hygiene and curriculum of both require supervision. Medical inspection of schools is now recognised as a branch of public-health work. It has shown the prevalence of ill-health, much of which is preventable. The author notes with approval the value of invalid and "open-air" schools, and he also discusses the difficult question of the training and care of the mentally deficient.

Not the least interesting section of the book is that

which deals with the causes of infant mortality. Most diseases of childhood are preventable, and yet 20 per cent. of children die before their fifth birthday. Infancy must always remain a critical period of life, but it should be relieved of many dangers which now decimate it. The statistical value of death certificates will not be great until they become confidential and cease to be framed so as to meet the susceptibilities of parents. Syphilis is scarcely mentioned in death certificates, although it is recognised as a potent cause of premature birth and death in early childhood.

The value of the volume is enhanced by the index, which is well arranged and adequate.

#### OUR BOOK SHELF.

*Lehrbuch der Pharmakognosie.* By Dr. George Karsten and Dr. Friedrich Oltmanns. Second edition. Pp. vi+358. (Jena: Gustav Fischer, 1909.) Price 9 marks.

IN the first edition of this work, published in 1903, Prof. Karsten explained his object to be the provision of a text-book that should treat pharmacognosy from a botanical point of view, and, considered in this light, it must be admitted that his object was successfully attained. But the second edition has more ambitious pretensions; it is intended to present a "clear survey of pharmacognosy and to introduce the young pharmacist to the varied provinces of that science."

The arrangement and treatment of the subject-matter are similar to those that were adopted in the first edition. The classification is on strictly botanical lines. Each drug is separately described, the description including the botanical and geographical sources, the morphology, anatomy, and constituents. In almost all instances the lion's share has fallen to the morphology and anatomy, these usually occupying some three-fourths of the entire description, but occasionally more, as with white hellebore rhizome, where only twenty lines out of six pages are devoted to the other points. This part of the descriptions is excellent, and doubtless many pharmacognosists will frequently refer to the very complete, detailed, and well-illustrated accounts of the morphology and anatomy of the drugs.

This, however, is all that can be said in favour of the work. The constituents of the drugs, for the young pharmacist a most important branch, are dismissed in three or four lines, in which sins of omission and commission are frequent and great. Take, for instance, gentian root and chamomile flowers, in which the bitter principles are entirely forgotten; opium, ipecacuanha, aconite, hydrastis, colchicum, and conium, all of them most important drugs, in which the proportion of the constituents is sadly inaccurate; ergot, liquorice, senna, euphorbium, in which they are not brought up to date. Indian and Turkey opiums are said to be made into balls about the size of the fist, and covered with *Rumex* fruits, while Persian opium is usually made into sticks! Seldom is any sufficient account given of the diagnostic characters of the genuine drug, of the adulterants, changes on keeping, preservation, preparation for the market, commerce, &c. Such a work fails to give a "clear survey of pharmacognosy," and cannot be recommended as a means of introducing the young pharmacist "to the varied provinces of pharmacognosy." It relegates that science to the position of a subordinate department of botany, and shows once more that the author of a work on